



THE CITY OF SAN DIEGO

City of San Diego  
Planning & Development Review  
**Building Development Review**  
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## Building Newsletter 3-10

### Return Air Ducts Through R-3/U-1 Occupancy Separations

Interpretations of State and Local Building Codes  
1998 California Building Code: Chapter 3  
Revision Date: July 1999

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This building newsletter outlines the minimum construction requirements for plenums used as return air ducts for forced air units (FAUs). These requirements apply only to air duct penetrations of the one-hour occupancy separation between a Group R, Division 3 and a Group U, Division 1 Occupancy, provided such ducts within the U-1 Occupancy are constructed of No. 26 gauge galvanized steel minimum with no openings into that occupancy. See Uniform Building Code Section 302.4, Exception 3.

#### I. Penetration of Enclosed Spaces Under Stairways

Penetration of the occupancy separation may occur in enclosed spaces under stairways where no access is provided and where such spaces are used as return air ducts for FAUs. The plenum space under the stairs is not

considered to be usable space and need not comply with the requirements of CBC Section 1003.3.3.9. See Figure 1.

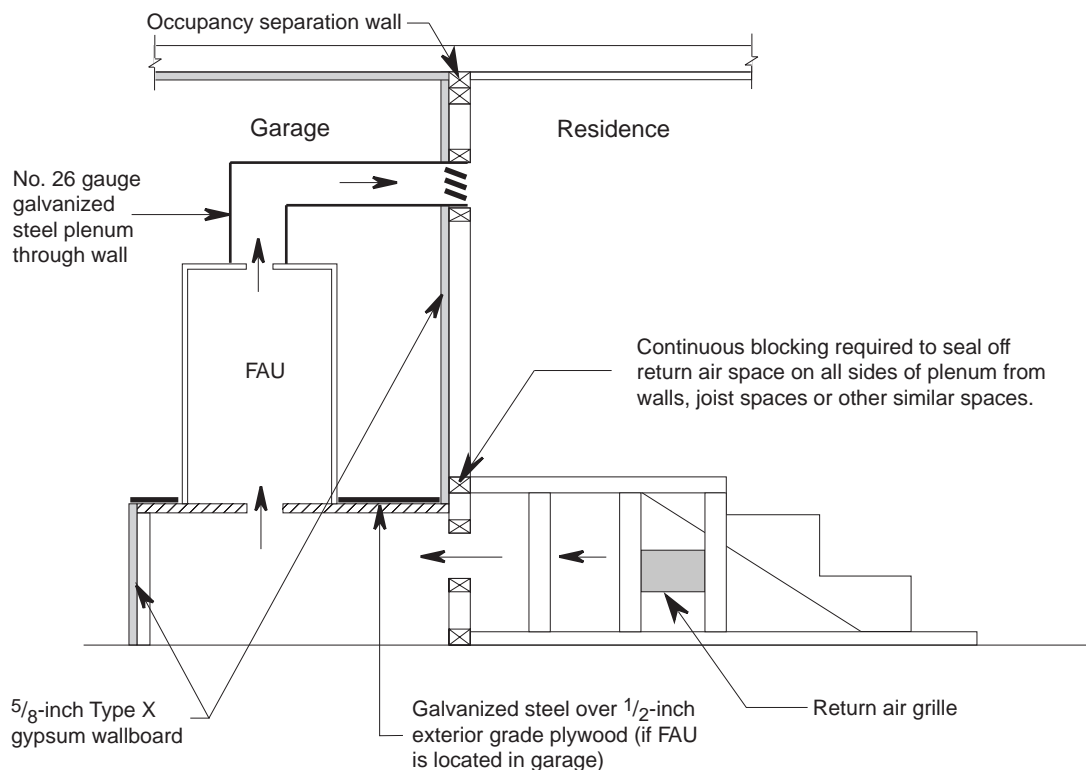
#### II. Penetration in Other Locations

Penetration of the occupancy separation may occur wherever construction is as shown in Figure 2 and the return air grille opens directly into the return air duct under a forced air unit located in the garage.

#### III. Protection of Plumbing and Electrical Wiring

If any adjacent wall spaces contain plumbing or electrical wiring, however, they must be separated from the plenum by  $\frac{5}{8}$ -inch Type X gypsum wallboard or equivalent one-hour fire-resistive construction on the enclosed side. Electrical wiring will not be permitted in the plenum space in either case.

Figure 1



**Figure 2**